

Notice of Allowability

Application No.

09/921,518

Examiner

PHUC T DANG

Applicant(s)

MOORE, JOHN T.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE with amendment filed September 7, 2004.
2. ☒ The allowed claim(s) is/are 1 and 3-88 (renumbered as in new claims 1-87).
3. ☒ The drawings filed on 30 April 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
(a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No. ____.
(b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
(c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

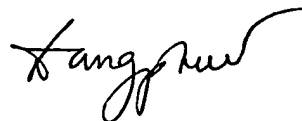
9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. <u>090704</u> | 6 <input type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

PHUC T. DANG
PRIMARY EXAMINER

PD



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DETAILED ACTION

Examiner's Statement of Reasons for Allowance

1. Claims 1 and 3-88 are allowed.

Claims 1 and 3-88 are renumbered as in new claims 1-87.

2. The following is an examiner's statement of reasons for allowance:

Claim 1 is allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming memory circuitry sequentially, comprising a step of (b2) forming respective voltage or current controlled resistance settable semiconductive material for the plurality of memory cell storage after step (b1), in combination with the rest of the limitations of claim 1.

Claim 9 is allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming memory circuitry sequentially, comprising a step of © forming a plurality of memory cell storage devices comprising voltage or current controlled resistance settable semiconductive material; wherein step © is performed after step (a) and (b), and step (b) is performed after step (a), in combination with the rest of the limitations of claim 9.

Claims 12 and 17 are allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming random access memory circuitry, comprising a step of forming voltage or current controlled resistance settable semiconductive material in electrical connection with the respective first electrodes; and forming at least one second memory cell electrode in electrical connection with

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the voltage or current controlled resistance settable material, in combination with the rest of the limitations of each claim 12 and 17.

Claims 22 and 65 are allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming integrated circuitry, comprising a step of forming a device comprising two metal comprising electrodes separated by a voltage or current controlled resistance settable semiconductive material, the resistance settable semiconductive material being formed after forming the metal interconnect line, in combination with the rest of the limitations of each claim 22 and 65.

Claims 31 and 73 are allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming integrated circuitry, comprising a step of forming voltage or current controlled resistance settable semiconductive material with the opening in electrical connection with a respective one of the two components and in electrical connection with the metal interconnect line, in combination with the rest of the limitations of each claim 31 and 73.

Claims 37 and 79 are allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming integrated circuitry, comprising a step of forming voltage or current resistance settable semiconductive material within the opening in electrical connection with a respective one of the two device components, the resistance settable semiconductor material being formed to only partially fill the opening; and forming a conductive material within the opening in electrical

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connection with the resistance settable semiconductive material and the metal interconnect line, in combination with the rest of the limitations of each claim 37 and 79.

Claim 47 is allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming memory circuitry sequentially, comprising a step of (b) forming a plurality of memory cell storage devices comprising chalcogenide material; wherein step (b) is performed after step (a), in combination with the rest of the limitations of claim 47.

Claim 53 is allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming memory circuitry sequentially, comprising a step of (c) forming a plurality of memory cell storage devices comprising chalcogenide material; wherein step (c) is performed after steps (a) and (b), in combination with the rest of the limitations of claim 53.

Claims 55 and 60 are allowable over the prior art for at least the reason that the prior art of record, taken alone or in combination, fails to teach or reasonably suggests a method of forming at least two random access memory cells, comprising a step of forming chalcogenide comprising material in electrical connection with the respective first electrodes; and forming at least one second memory cell electrode in electrical connection with the chalcogenide comprising material, in combination with the rest of the limitations of each claim 55 and 60.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is (571) 272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.

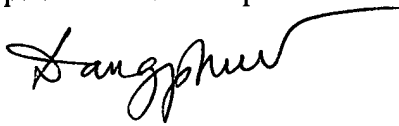
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4. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

5. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc T. Dang

PD

A handwritten signature in black ink, appearing to read 'Phuc T. Dang', with a long horizontal flourish extending to the right.

Primary Examiner

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